Healthy Adults - *Overview*

Key points

- ***Simple routines, such as regular physical activity, healthy eating habits, and avoiding tobacco use improves health.***
- ***Much of the illness, disability & death associated with aging is avoidable.***
- ***Early detection and care coordination of diseases/illness saves lives.***

Why is the health of adults important?

Poor health is not an inevitable consequence of aging. Although the risk of disease and disability increases with advancing age, much of the illness, disability, and death associated with chronic disease is avoidable through known prevention and care measures. Key measures include practicing a healthy lifestyle, the use of early detection practices and care coordination such as:

- regular physical activity
- healthy eating
- avoiding tobacco use
- responsible sexual behavior
- screening for breast, cervical, skin, and colorectal cancers, cardiovascular disease, diabetes and its complications, and depression
- increasing adoption of chronic care management in health care settings

Why is the health of adults a critical issue for Missouri?

- **Smoking**
  - ✓ Each day in Missouri, smoking causes more than 33 deaths.
  - ✓ In 2001, over one-fourth (25.9%) of Missouri adults smoked. Missouri's high smoking rates contribute to the state's ranking well above the U.S. average for such smoking-related health problems as heart disease, cancers, emphysema, and low birth weight infants.
  - ✓ Health care costs from tobacco use in Missouri account for over $1.7 billion annually. Approximately $415 million of this amount is in Medicaid costs.
  - ✓ In 2001, almost 40% of Missouri's adult workers were at risk of exposure to tobacco smoke in their work areas.
- **Overweight and Obesity**
  - ✓ Obesity is considered to be at epidemic proportions in Missouri.
  - ✓ In 2001, almost one-fourth (23.2%) of the adults in Missouri were obese.
- **Physical Inactivity**
  - ✓ In 2001, the prevalence of physical inactivity remained high at 27.5% among Missouri adults.
- **Nutrition**
  - ✓ In 2000, only 20.7% of Missouri adults reported eating 5 or more servings of fruits and vegetables per day.
  - ✓ Racial disparities regarding fruit and vegetable consumption are greater in Missouri than nationally. Nationally, 21.3% of African-American adults reported daily consumption of 5 fruits and vegetables while that number was only 14.9% for Missouri African-American adults.
- **Chronic Disease Care Management**
  - ✓ Poor care coordination for patients with chronic illnesses leads to conflicting treatment recommendations, adverse drug interactions and unnecessary hospitalizations and nursing home placements.

- ✓ Lack of continuous monitoring, follow-up and feedback to patients and providers allows critical warning signs to go undetected and untreated, leading to costly and preventable complications.

- **Sexually Transmitted Diseases**
  - ✓ In 2000, Missouri ranked 14th in the incidence rate of gonorrhea, 32nd in the rate of syphilis, and 24th in the rate of chlamydia in the nation.
  - ✓ Direct costs alone (inpatient and outpatient) equate to over $200 million for STDs within Missouri.

- **Tuberculosis**
  - ✓ Treatable, but not vaccine preventable, tuberculosis is one of the major diseases that have developed antibiotic drug resistant strains.

SUCCESS INDICATORS	Healthy People 2010	2000 Baseline	2001 Actual	2002 Actual	2003 Target	2004 Target	2005 Target
Percent of adult current smokers	12.0	27.2	25.9	26.5	25.7	25.6	25.4
Percent of women smoking during pregnancy	2.0	18.3	18.3	18.1	17.9	17.7	17.5
Percent of adults at risk of exposure to tobacco smoke at work	**	19.4	39.6	38.0	37.6	37.0	36.5
Prevalence of overweight (BMI 25-29.9 kg/m^2)	**	34.4	36.2	37.0	33.4	33.1	32.7
Prevalence of obesity (BMI>=30 kg/m^2)	15.0	22.1	23.2	23.2	21.5	21.3	21.0
Percent of adults who report no leisure time physical activity during past month	20.0	28.8	27.5	26.5	24.8	23.6	22.4
Prevalence of individuals consuming 5 or more fruits and vegetables daily	**	20.7	*	19.2	*	22.8	*
Number of organizations participating in Missouri's Chronic Disease Care Management initiative	**	*	*	10	25	50	100
Rate of sexually transmitted diseases (per 100,000)**:**							
Syphilis	0 (elimination)	0.5	0.5	1.4	1.4	1.3	1.2
Gonorrhea	119.0	162.5	155.9	160.0	120.8	110.0	100.0
Chlamydia	**	246.0	249.3	298.2	215.9	207.7	200.0
Rate of tuberculosis (per 100,000)	0 (elimination)	3.8	2.8	2.8	2.4	2.0	1.8

*Data not available **No comparable 2010 objective or uses different data source

Success Indicators:

- Prevalence of current smoking
- Prevalence of women smoking during pregnancy
- Prevalence of adults at risk for exposure to tobacco smoke at work

What are the trends?

The trend in prevalence of current cigarette smoking among Missouri adults has remained stable for more than a decade. In 1988, 26.2% of adults smoked compared to 26.5% in 2002. Smoking has also remained most prevalent among adults that have less than a high school education (37.3% in 2002). Among Missouri public high school students, cigarette smoking has declined somewhat over the past six years - from 39.8% in 1995 to 30.3% in 2001.

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How does Missouri compare to others?

Smoking prevalence among Missouri adults and youth is higher than that of their peers across the United States. Smoking among U.S. adults was 23% in 2002 and among U.S. high school students was 28.5%. It is also higher among adults in the neighboring states of Arkansas (26.3), Illinois (22.8), Iowa (23.2), Kansas (22.1) and Nebraska (22.7).

A strategy that has effectively reduced tobacco use is to increase the price of tobacco products, such as by raising the state's excise tax. It is estimated that for every 10% increase in the price of cigarettes, overall consumption will be reduced by approximately 4% among adults, and by 7% among young people and pregnant women. When compared to other states' excise tax on cigarettes, Missouri's tax of 17 cents per pack ranks among the six lowest in the country. Among border states, only Kentucky's 3 cents is less than Missouri.

Cents Per Pack Cigarette Excise (2002) in Missouri and Surrounding States

Illinois	Kansas	Nebraska	Iowa	Arkansas	Oklahoma	Tennessee	Missouri	Kentucky	United States
98	79	64	36	34	23	20	17	3	39

Source: Campaign for Tobacco-Free Kids. (2002). *State cigarette taxes rates & rank, date of last increase, annual pack sales & revenues, and related data.* www.tobaccofreekids.org

Interventions that work:

The Task Force on Community Preventive Services completed a thorough review of published tobacco control research and made recommendations for interventions that effectively reduced tobacco use and exposure to secondhand smoke. The recommended evidence-based strategies include:

- **Increasing the price of tobacco products such as by increasing excise taxes.** Studies following cigarette tax increases in California, Massachusetts and Oregon all showed significant declines in tobacco consumption.
- **Adopting policies prohibiting tobacco use in workplaces and public places.** These policies reduce exposure to secondhand smoke and also decrease tobacco use. A published study reported that if all workplaces in the United States were smoke-free, cigarette use would decrease by 4.5%. California, New York, Delaware and Connecticut have adopted laws banning smoking in all indoor workplaces, including restaurants and bars.
- **Counseling patients to quit tobacco use by health care providers** is highly effective. Additionally, health care systems prompting health care providers to counsel patients who smoke to quit is strongly recommended.
- **Providing telephone support (ouit-line) for tobacco users, particularly when combined with reduced cost pharmacologic treatments** (drug therapies) is highly effective in increasing quitting among adults.

These interventions as part of a **comprehensive tobacco use prevention and cessation program** can have a significant impact on tobacco use. The combination of these efforts through a comprehensive tobacco use prevention program implemented in California during the early 1990's resulted in a 57% reduction in tobacco use while there was only a 27% reduction in the United States during the decade. There were also 33,000 fewer deaths due to heart disease and lung and bronchial cancers were reduced by 14% during this period. In 2001, 17.2% of adults in California smoked cigarettes compared to 25.9% of Missouri adults.

Comprehensive Tobacco Use Prevention Program

Key components include:

- Evidence-based community and school programs that encompass tobacco use prevention education and policy adoption to create tobacco-free environments.
- Affordable, accessible and effective cessation services.
- Media and counter-marketing to support local programs and promote cessation services.
- Statewide programs to support local efforts to reduce tobacco use and exposure to secondhand smoke.
- Chronic disease programs for screening and early detection of tobacco-related diseases.
- Enforcement of state and local tobacco control laws and policies.
- Surveillance and evaluation systems to track tobacco use and progress in meeting program objectives.

Clean Indoor Air

Missouri's State Clean Indoor Air Law offers limited protection for nonsmokers because it allows designated smoking areas in workplaces and public places. Communities and workplaces in Missouri are working to provide increased protection for workers and the public by adopting policies and ordinances further restricting smoking indoors.

DHSS Strategies for Supporting the Intervention

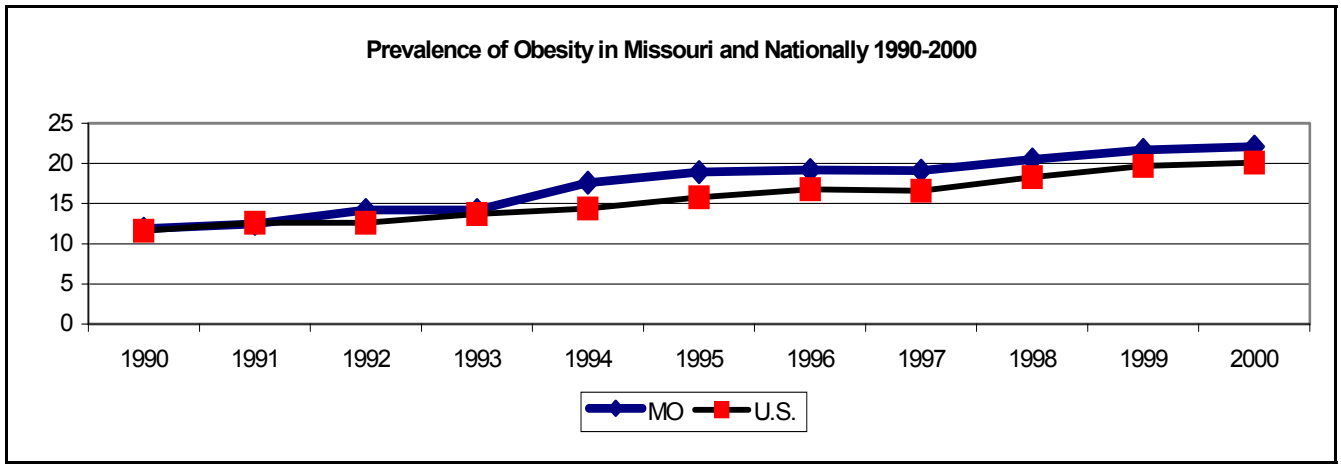
1. Support local efforts to reduce secondhand smoke in workplaces and public places.
2. Collaborate with health care provider systems to encourage counseling adult smokers to quit, particularly pregnant women.
3. Secure funding for an evidence-based comprehensive tobacco use prevention and cessation program.
4. Support efforts to increase the excise tax on tobacco products.

Success Indicator:

- Prevalence of overweight and obesity

What are the trends?

Obesity is considered to be at epidemic proportions in the United States, and Missouri is no exception. Obesity rates increased by 66% from 1990 to 2000. Overweight trends are stable for the U.S. and Missouri from 1990 to 2000.



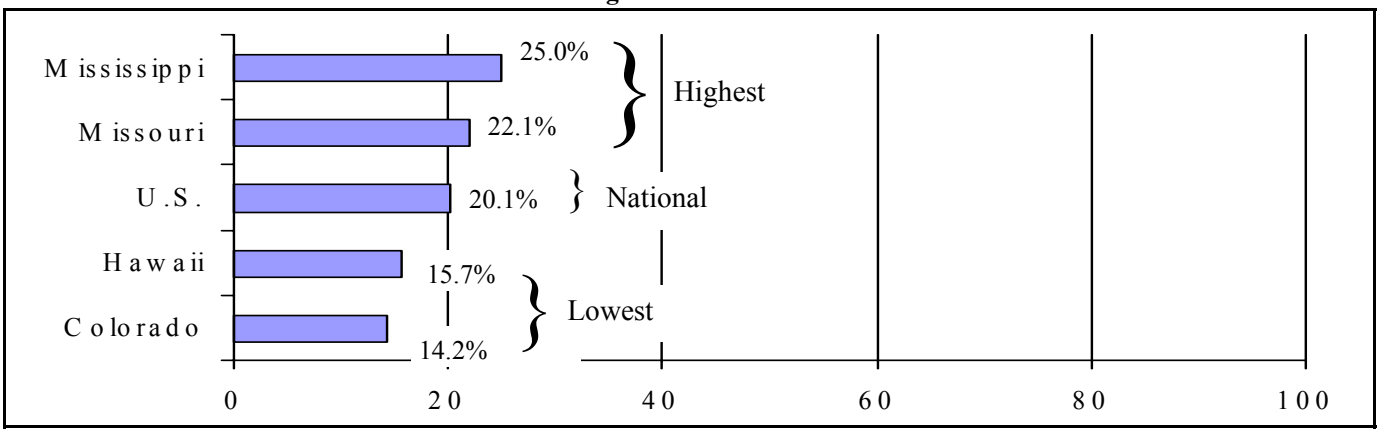
Source: BRFSS, 1990-2000

How does Missouri compare to others?

In 2000, Missouri ranked tenth in the prevalence of obesity in the United States and that prevalence continues to increase.

Nationally, as in Missouri, obesity disproportionately affects minorities -- the prevalence is 30.2% of non-Hispanic African American women and 28.4% of Mexican-American women.

Prevalence of Obesity Among States, Comparing Missouri to the National Prevalence and States with the Highest and Lowest Prevalence



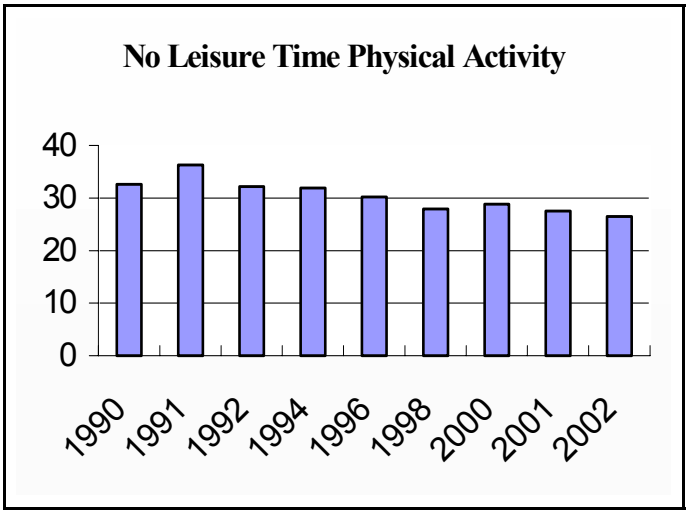
Source: Centers for Disease Control, 2000

Success Indicator:

- Prevalence of physical inactivity

What are the trends?

The prevalence of physical inactivity in Missouri adults has decreased slightly since 1990, from a peak prevalence of 36.3% in 1991 to a decade low prevalence of 27.5% in 2001.



Source: CDC, BRFSS using all participating states' data each year.

Data collected every even numbered year; no Missouri data for 1993, 1995, 1997, and 1999.

Data are weighted to each year's U.S. and state population estimates and age-adjusted to the year 2000 U.S. population standard.

How does Missouri compare to others?

The prevalence of physical inactivity in Missouri adults (27.5%), which is 12th highest in the nation, does not differ significantly from that of the U.S. overall median (25.7%).

Prevalence of Physical Inactivity by State and Gender, 2001

State	Overall	Men	Women
U.S. Median	25.7	23.1	28.1
Missouri	27.5	24.3	30.5
Iowa	25.9	23.9	27.9
Kansas	26.7	24.2	29.0
Utah	16.5	15.4	17.5
Louisiana	35.6	32.1	38.8

Source: CDC, BRFSS (2003), http://www.cdc.gov/brfss/

Interventions that work:

Community-Based Interventions to Increase Physical Activity

Regular physical activity substantially reduces the risk of dying of coronary heart disease, the nation's leading cause of death, and decreases the risk for colon cancer, diabetes, and high blood pressure. It also helps to control weight; contributes to healthy bones, muscles, and joints; reduces risk for falls among the elderly; helps to relieve the pain of arthritis; reduces symptoms of anxiety and depression; and is associated with fewer hospitalizations, physician visits, and medications.

Despite the proven benefits of physical activity, in 2001 over 60% of Missouri adults did not get enough physical activity to provide health benefits.

By implementing interventions demonstrated to be effective in increasing physical activity, policy makers and public health providers can help their communities achieve these goals while using community resources efficiently. The Task Force on Community Preventive Services strongly recommends the following intervention to improve physical activity.

- Community-wide campaigns—large-scale, highly visible campaigns with messages directed to large audiences through different types of media, including television, radio, newspapers, movie theaters, billboards, and mailings.
- School-based physical education (PE) - increase the amount of time students spend doing moderate or vigorous activity in PE class or having students be more active during class.
- Social support interventions in community settings—changing physical activity behavior through building, strengthening, and maintaining social networks that provide supportive relationships for behavior change (e.g., setting up a buddy system or setting up walking groups or other groups to provide friendship and support).
- Individually-adapted health behavior change programs—behavior change programs teach behavioral skills to help participants incorporate physical activity into their daily routines.
- Creation of, or enhanced access to, places for physical activity combined with informational outreach activities—efforts of worksites, coalitions, agencies, and communities in attempts to change the local environment to create opportunities for physical activity. Such changes include creating walking trails, building exercise facilities, or providing access to existing nearby facilities.

DHSS Strategies for Supporting the Intervention

1. Partner with communities and other state and federal agencies to implement priority strategies of the statewide physical activity strategic plan, including:
   - Promote regular physical activity among all individuals at all life stages
   - Increase the availability of safe, accessible and affordable physical activity facilities
   - Increase the knowledge and use of evidence-based approaches to physical activity interventions by health care providers, public health educators and teachers
   - Increase the quality and quantity of physical activity for children and adolescents in the school setting
   - Reduce the disparity in physical activity among people of differing age, ethnicity, race, and socioeconomic status
2. Collaborate with St. Louis University Health Communications Research Laboratory to plan and implement community-wide campaigns in selected communities to promote the benefits of walking.
3. Promote the use of *Move For Your Health* physical activity challenge, an eight-week physical activity program that emphasizes social support and behavioral skills to help participants incorporate physical activity into their daily routines.

Success Indicators:

- Prevalence of individuals consuming 5 or more fruits and vegetables daily

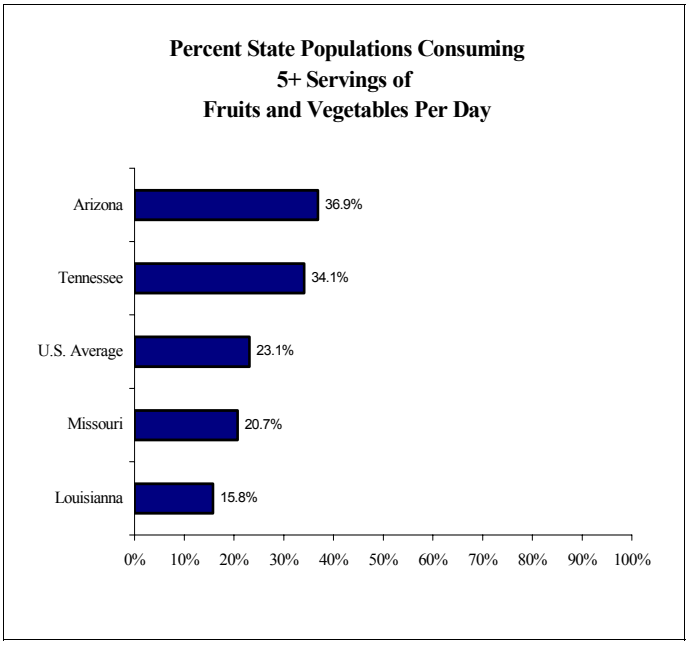
What are the trends?

In 2000, only 20.7% of Missouri adults reported eating 5 or more servings of fruits and vegetables each day. Missouri women reported better fruit and vegetable consumption than Missouri men, with 24.2% of women and 16.8% of men consuming the recommended number of servings. From 1990 to 2000, the proportion of Missouri adults who ate five or more servings of fruit and vegetables remained basically unchanged.

How does Missouri compare to others?

Nationally, the proportion of U.S. adults who eat 5 or more daily servings of fruits and vegetables was 23.1%. In all states, adults reported low levels of daily fruit and vegetable consumption. Arizona reported the highest level (36.9%), while Louisiana reported the lowest (15.8%). Missouri (20.7%) ranked below the national average.

Racial disparities regarding fruit and vegetable consumption are greater in Missouri than nationally. Nationally, 21.3% of African-American adults reported daily consumption of 5 fruits and vegetables, similar to the level of consumption for white adults (23.4%). However, in Missouri only 14.9% of African-American adults reported daily consumption of 5 fruits and vegetables, substantially lower than the level of consumption for white adults (21.4%). Twenty-two percent of Missouri Hispanic adults reported eating the recommended amount.



Source: Behavior Risk Factor Surveillance System 2000 Centers for Disease Control and Prevention

Interventions that work:

Integrated Nutrition and Health Promotion Programs

Good nutrition is essential to good health, plus it is vital to reducing the risk for death or disability due to chronic diseases such as obesity, heart disease, certain cancers, diabetes, stroke, and osteoporosis. It has been estimated that dietary changes could reduce cancer deaths in the United States by as much as 35 percent. Eliminating disparities by providing accessible and affordable opportunities to eat healthily and be active is a goal for all interventions undertaken.

Although there is limited evaluation data on effectiveness in changing long-term eating behaviors, interventions that seem to be working indicate that success requires not only strategies to change individual behaviors but also strategies to change community environments. Environmental influences from workplaces, grocery stores, restaurants, communities and mass media often compete with personal goals to improve eating habits. Long-term improvement in nutritional habits requires the ready availability of appealing, affordable fruits and vegetables.

5 A Day for Better Health

The National Cancer Institute (NCI) and the Produce for Better Health Foundation are lead agencies in the national 5 A Day program that works to increase the intake of fruits and vegetables through educational materials, public service announcements and web and computer technology. Through partnerships with the United States Department of Human Services (HHS) and the United States Department of Agriculture (USDA), the 5 A Day program works to increase awareness of the importance of fruit and vegetable consumption through all federal nutrition programs and other channels of communication with the general public.

Missouri Nutrition Network

The Dietary Guidelines for Americans are the foundation for nutrition education with increasing intake of fruits and vegetables as one of the core nutrition messages. The Missouri Nutrition Network program develops, implements, and evaluates nutrition education initiatives and materials designed to provide effective nutrition information to food stamp eligible families and their children.

Farmers' Market Nutrition Program

The Farmers' Market Nutrition Program provides fresh fruits and vegetables from farmers' markets to Women, Infants and Children (WIC) participants and to senior citizens. The program enables eligible participants to purchase farm-fresh products that help meet their nutritional needs.

DHSS Strategies for Supporting the Intervention

1. Develop and expand partnerships within state government and among public and private sectors to integrate 5 A Day and other messages promoting an increase in fruit and vegetable consumption into existing programs.
2. Identify barriers to consuming fruits and vegetables and effective strategies for promoting increased consumption of fruits and vegetables for all segments of the population through a report generated by the Missouri Council on the Prevention and Management of Overweight and Obesity.
3. Assist communities in identifying and changing policies and environments so that all people have the opportunity to obtain affordable and appealing healthy food choices.
4. Identify and seek potential funding sources to support nutritional interventions.

Success Indicator:

- Percent of health care providers that report adopting two or more of the six primary disease management components into their health care practice

What are the trends?

More than 20 states are developing and implementing disease management programs. Although these programs have primarily been implemented with Medicaid populations, the value to the general population is evident.

Missouri is joining this emerging trend by integrating the chronic disease care management approach into some health systems including the Medicaid fee-for-service program, the federally qualified health centers (FQHCs) and a few hospital systems. Examples of these efforts include:

- The Missouri Medicaid Disease Management Program, which began in November 2002, utilizes physician-pharmacist teams chosen geographically to match the location of the providers with patient locations. Each patient enrolled in the program will receive an initial assessment, an individualized patient care plan using standard clinical guidelines and patient education focusing on prevention and self-management.

- Disease management in the Missouri FQHCs, as part of the Health Disparities Collaborative, focused on diabetes, cardiovascular disease, asthma and arthritis management. From June 2000 to February 2001, preliminary results from the initial six Missouri FQHCs indicated that the centers had improved 11 of the 13 diabetes-related care measures, such as:
  - √ The prevalence of HbA_{1c} (mean blood glucose over the preceding 2-3 months) testing at least three months apart increased by 11%.
  - √ Referrals and receipt of dilated eye examinations increased by 48%.
  - √ Annual foot examinations increased by 25%.
  - √ Receipt of flu vaccinations increased by 62%.
  - √ The setting of self-management goals increased by 24%.

- The Missouri Arthritis and Osteoporosis Program was one of two states' programs awarded a grant from CDC to pilot an arthritis collaborative to develop primary care-based quality improvement activities for arthritis care. Four primary care physician teams were recruited for the project. Although clinical outcome data is not yet available, early successes include the enhanced care that patients received when one physician team converted to group visits and all four teams increased referrals to community resources, physical activity and self-management programs.

How does Missouri compare to others?

Although it is too soon to see the long-term health and economic outcomes from disease management in Missouri, specific research projects are showing positive results such as:

- In a Washington University School of Medicine study of health care costs over 3 months for congestive heart failure in patients under a care management program versus usual care, it was found that although the intervention costs more than the usual care, the intervention patients showed a decline in readmissions and total health care costs.

Missouri could expect results comparable to other states and national programs.

- Florida's Medicaid asthma disease management program reported that average asthma-related inpatient and outpatient hospital costs declined, prescription drug costs increased but total Medicaid expenditures for program participants decreased by 33%.
- National Diabetes Collaborative found for participating centers that a 1% reduction in HbA_{1c} levels translates into annual cost savings ranging from $685 to $950 per patient.
- The Virginia Health Outcomes Partnership asthma disease management program found that emergency room visits per 1,000 patients declined by 41% over a six-month period for patients treated by disease management trained physicians versus an 18% for those treated by physicians not trained in disease management. It was also found that dispensing of recommended drugs increased by as much as 25% and there was an estimated $3 in savings for every $1 spent.

Interventions that work:

Chronic Disease Care Management

Chronic disease care management (CCM) improves chronic illness outcomes by emphasizing the patient's role in self-management and anticipating and providing care on a continuous basis that is customized to the patient's needs and values. Under the CCM approach, practice teams are prepared with the patient's information, care guidelines and other resources at the time of the planned visit; cooperation among the many providers for the multitude of treatments needed is enhanced; and follow-up and self-care is augmented with community referrals and services.

All disease management programs should include the following six key system components:

- **Self-management** that comprises activities to increase patient knowledge, skills and confidence to become engaged in their own care with the provider to define problems, set priorities, establish goals, create treatment plans and solve problems.
- **Decision support** by increasing adherence to care guidelines and incorporating care standards into daily clinical practice as well as affiliating and dialoging with other providers to solve patient problems.
- **Clinical information system** or patient registry to measure the programs effectiveness, generate care reminders, facilitate care planning and provide feedback to providers and patients.
- **Delivery system design** that incorporates development of the multidisciplinary care team, defines roles and delegates tasks for team members including follow-up and use of a patient registry to review care and plan visits.
- **Health Care Organization** where improving chronic care is a part of the organization's mission, goals and business plan; senior leaders provide visible support by removing barriers and providing necessary resources to improve disease management efforts; and quality improvement activities are an intricate part of the care delivery system.
- **Community resources and policies** to identify and link health care systems with effective community programs and resources and encourage patients to participate in community education classes, support groups and reinforce self-care practices. Other community linkages may help with medication costs, case management, in-home assistance, nutritional services and transportation.

Although chronic disease care management has primarily been used for adult patients, it is projected that this approach to care could be equally effective for children. A majority of children in the United States have one or at most two chronic conditions. Therefore, beginning early with self-management and preventive care can substantially improve outcomes and reduce disease-related complications.

DHSS Strategies for Supporting the Intervention

1. Establish and coordinate a team of staff and partners from other agencies, organizations, associations, coalitions, health care system representatives and others to develop, promote and increase adoption of a patient-focused chronic disease care management approach by health care delivery systems in Missouri.
2. Conduct a conference to promote the CCM approach to health care systems and community partners.
3. Assess the capacity and needs of health care settings to incorporate the six components of disease management into practice and provide information and technical assistance.
4. Identify and link health care systems and community resources to improve the care and self-management of individuals with chronic diseases.
5. Develop an evaluation plan with short, intermediate and long-term indicators to determine the effectiveness of the CCM approach among Missouri population groups receiving this care.

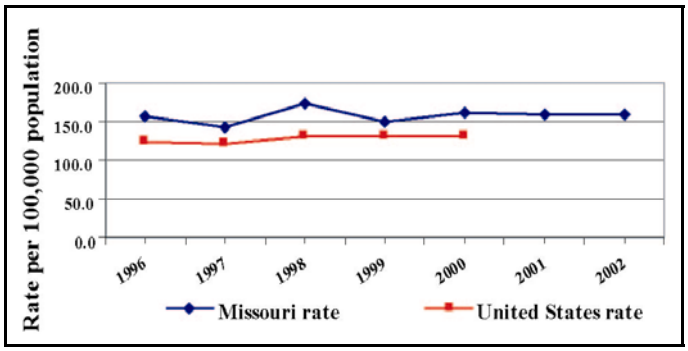
Success Indicator:

- Rate of sexually transmitted diseases

What are the trends?

Though chlamydia is the most common bacterial STD in the US today, it has been typically underreported because infection occurs without symptoms in 75% of women and 50% of men. According to the Centers of Disease Control and Prevention, the reported cases of chlamydia "are merely the tip of the iceberg." The rate of gonorrhea cases has fluctuated somewhat in the past 5 years; however, young African-American women and men remain at highest risk. The numbers of cases of primary and secondary syphilis in Missouri are small in comparison to the other STDs, with the largest numbers reported from St. Louis City.

Rate of Reported Gonorrhea
Per 100,000 Population

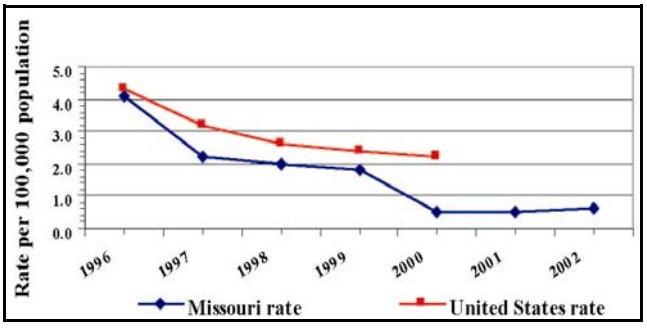


Source: Department of Health and Senior Services, Office of Surveillance, *Epidemiologic Profiles of HIV/STDs in Missouri*

How does Missouri compare to others?

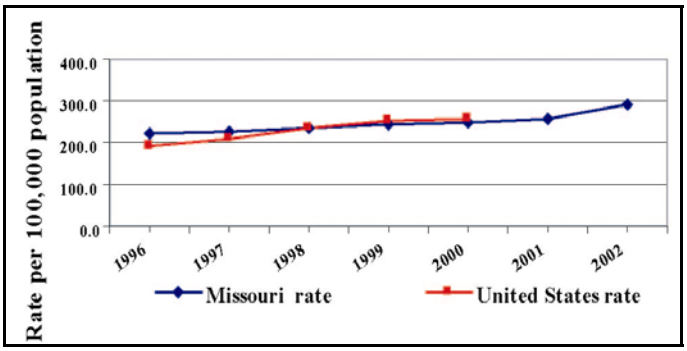
The rate for syphilis, gonorrhea and chlamydia for the state of Missouri and the United States is shown on the following graphs.

Rate of Reported Primary and Secondary Syphilis
Per 100,000 Population



Source: Department of Health and Senior Services, Office of Surveillance, *Epidemiologic Profiles of HIV/STDs in Missouri*.

Rate of Reported Chlamydia
Per 100,000 Population



Source: Department of Health and Senior Services, Office of Surveillance, *Epidemiologic Profiles of HIV/STDs in Missouri*

Interventions that work:

Sexually Transmitted Disease Prevention and Control Programs

Public health, in collaboration with other community partners, plays a central role in developing and implementing sexually transmitted disease prevention and control programs that have the following components:

- Disease surveillance
- Targeted outreach and screening of at-risk populations including sexually active adolescents and women under 24 years of age
- Adequate and timely treatment for infected persons
- Partner elicitation and notification
- Adequate and timely treatment of partners

In addition, health education programs for individuals to reduce risks by engaging in safer lifestyle practices, such as abstinence, maintaining mutually monogamous relationships, limiting sex partners, condom use, and obtaining regular medical care, are effective in preventing sexually transmitted diseases.

According to the Centers for Disease Control and Prevention Program Operations Guidelines for STD Prevention, STD programs exist in highly diverse, complex, and dynamic social and health service settings. The guidelines must be adapted to local area needs because there are differences in the:

- Availability of resources and range and extent of services among different areas
- Level of various STDs and health conditions in communities
- Level of preventative services available
- Amount of financial resources available to provide STD services

While local needs and expectations must be taken into account, all STD programs should establish priorities, examine options, calculate resources, evaluate the demographic distribution of the diseases to be prevented and controlled, and adopt appropriate strategies.

DHSS Strategies for Supporting the Intervention

1. Use disease surveillance to maintain an annual primary and secondary syphilis disease intervention index of 0.6 through 2005.
2. Assure that 85% of outstate patients and metropolitan STD clinic patients with untreated gonorrhea and/or chlamydia get treated.

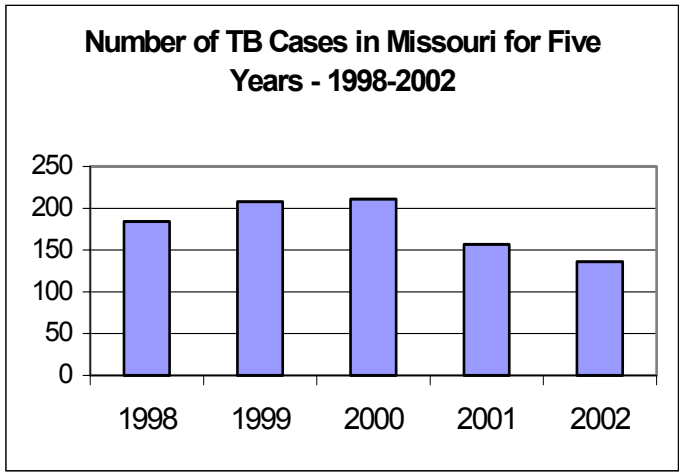
Success Indicators:

- Rate of tuberculosis

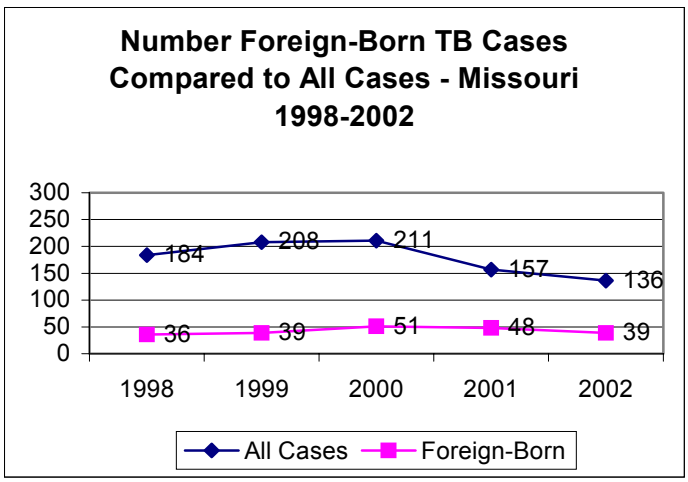
What are the trends?

Missouri is seeing a general decline in the number of cases. Each individual diagnosed with tuberculosis disease has come into contact with 8-12 individuals who must undergo 6-9 months of treatment if they are found to be positive for the disease.

Foreign-born TB cases constituted 1/3 of all cases in 2001. Increased travel of people from countries with high rates of tuberculosis has been a major factor.



Source: Missouri DHSS, Office of Surveillance

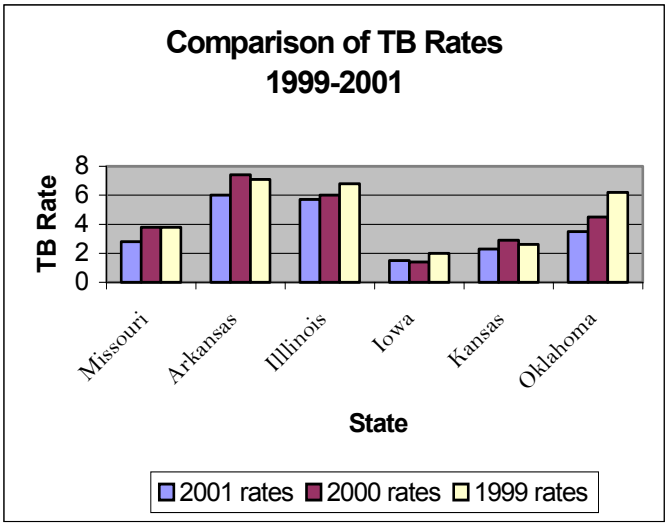


Source: Missouri DHSS, Office of Surveillance

How does Missouri compare to others?

Missouri is exhibiting the same general trends as seen nationally, including the presence of multiple drug resistant forms of TB.

Some of Missouri's border states had the following rates:



Source: Missouri DHSS, Office of Surveillance
Rates per 100,000

Interventions that work:

Tuberculosis Prevention and Control Program

Tuberculosis cases are managed through the "Tuberculosis Information Management System" or TIMS. This is a database system that is integrated with the Centers for Disease Control and Prevention information system, which allows for easy transfer of files. TIMS tracks active disease cases and their treatment status, thus monitoring the move toward the goal of completion of therapy.

Case Management

Case management is ensuring that medications are obtained through local health department facilities, monitoring for adherence to treatment and ensuring that patients are placed on appropriate treatment for TB or TB infection. The nurse case manager ensures that patients are appropriately isolated until they are considered not contagious and not capable of transmitting tuberculosis. Patients receive the 3 or 4 recommended medications for the treatment of TB and the appropriate 1 or 2 medications that are used to treat TB infection. Patients must be treated for at least 6 months, and ensuring adherence is the key to preventing the development of multi-drug resistant tuberculosis (MDR-TB). The case manager often consults with the primary care provider. In addition, the case manager may refer the patients to the appropriate source of care for diagnostic and evaluative services in the public or private sectors.

Education/Behavioral Change

Incentives used to motivate patients to take their TB medications is a strategy well documented in the literature. Incentives that have been used with patients include: the purchase of tokens to take the bus to a local health department or private physician to receive their TB medications; reimbursement for the purchase of gasoline to take them to the local health department; or, assistance with paying the patient's rent for a limited period of time, etc.

Public Health Follow-up

Directly observed therapy (DOT) is used to ensure adherence with treatment. It decreases the threat of transmission and prevents the development of MDR-TB and improves completion of therapy rates. DOT consists of having a health care worker watch a patient take each dose of medication. The reason that this approach is so important is that most people do not take medications as well as they should, so non-adherence with treatment is a big challenge when people are supposed to take TB medications for at least six months. The use of DOT is effective in ensuring completion of treatment.

A contact interview and investigation are effective in stopping further transmission of tuberculosis and preventing the development of future cases of TB disease. Contacts to TB are identified through the contact interview process. Nurses and outreach workers in the local health departments make every effort to test, examine and treat those contacts as needed.

Environmental Modification

The use of environmental controls such as ultraviolet lights in high-risk settings are considered effective in controlling tuberculosis and reducing the opportunities for transmission of TB, especially in congregate settings such as correctional facilities, homeless shelters, etc.

DHSS Strategies for Supporting the Intervention

1. Prioritize and follow-up on those with risk factors for tuberculosis to prevent the development of tuberculosis.
2. Decrease transmission of Multiple Drug Resistant tuberculosis, by ensuring directly observed therapy (DOT) for active cases.